FORM PTO 1390
(REV 5-93) US DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. §371

ATTORNEY DOCKET NUMBER
2001_0263A

U.S. APPLICATION NO. (if known, see 37 CFR 1.5)
NEW 09/787301

International Application No.	International Filing Date	Priority Date Claimed
PCT/NO99/00283	September 15, 1999	September 16, 1998

Title of Invention
METHOD FOR PREPARING A H_2-RICH GAS AND A CO_2-RICH GAS AT HIGH PRESSURE

Applicant(s) For DO/EO/US: Ola OLSVIK

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. [X] This is a **FIRST** submission of items concerning a filing under 35 U.S.C. §371.

2. [] This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. §371.

3. [X] This express request to begin national examination procedures (35 U.S.C. §371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. §371(b) and PCT Articles 22 and 39(1).

4. [X] A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.

5. [X] A copy of the International Application as filed (35 U.S.C. §371(c)(2)) **(in English)**
   a. [] is transmitted herewith (required only if not transmitted by the International Bureau).
   b. [X] has been transmitted by the International Bureau.
   c. [] is not required, as the application was filed in the United States Receiving Office (RO/US)

6. [] A translation of the International Application into English (35 U.S.C. §371(c)(2)).

7. [X] Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. §371(c)(3)).
   a. [] are transmitted herewith (required only if not transmitted by the International Bureau).
   b. [] have been transmitted by the International Bureau.
   c. [] have not been made; however, the time limit for making such amendments has NOT expired.
   d. [X] have not been made and will not be made.

8. [] A translation of the amendments to the claims under PCT Article 19.

9. [X] An oath or declaration of the inventor(s) (35 U.S.C. §371(c)(4)).

10. [] A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. §371(c)(5)).

Items 11. to 14. below concern other document(s) or information included:

11. [X] An Information Disclosure Statement under 37 CFR 1.97 and 1.98.

12. [X] An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.

13. [X] A FIRST preliminary amendment.

    [] A SECOND or SUBSEQUENT preliminary amendment.

14. [X] Other items or information: (a) Form PCT/IB/308; (b) International Search Report; (c) Published International Application (WO 00/18681); and (d) International Preliminary Examination Report (5 pages).

JC03 Rec'd PCT/PTO 16 MAR 2001

U.S. APPLICATION NO. (if known, see 37 CFR 1.5) NEW 09/787301	INTERNATIONAL APPLICATION NO. PCT/NO99/00283	ATTORNEY'S DOCKET NO. 2001_0263A

15. [X] The following fees are submitted	CALCULATIONS	PTO USE ONLY
BASIC NATIONAL FEE (37 CFR 1.492(a)(1)-(5)):		
Neither international preliminary examination fee nor international search fee paid to USPTO and International Search Report not prepared by the EPO or JPO $1000.00		
International Search Report has been prepared by the EPO or JPO . . . . . $ 860.00		
International preliminary examination fee not paid ot USPTO but international search paid to USPTO . . . . . $ 710.00		
International preliminary examination fee paid to USPTO but claims did not satisfy provisions of PCT Article 33(1)-(4) . . . . . $ 690.00		
International preliminary examination fee paid ot USPTO and all claims satisfied provisions of PCT Article 33(1)-(4) . . . . . $ 100.00		
ENTER APPROPRIATE BASIC FEE AMOUNT =	$1,000.00	
Surcharge of $130.00 for furnishing the oath or declaration later than [] 20 [] 30 months from the earliest claimed priority date (37 CFR 1.492(e)).	$	

Claims	Number Filed	Number Extra	Rate		
Total Claims	20 -20 =	0	X $18.00	$	
Independent Claims	1 - 3 =	0	X $80.00	$	
Multiple dependent claim(s) (if applicable)			+ $270.00	$	

TOTAL OF ABOVE CALCULATIONS =	$1,000.00	
[] Small Entity Status is hereby asserted. Above fees are reduced by 1/2.	$	
SUBTOTAL =	$1,000.00	
Processing fee of $130.00 for furnishing the English translation later than [] 20 [] 30 months from the earliest claimed priority date (37 CFR 1.492(f)). +	$	
TOTAL NATIONAL FEE =	$1,000.00	
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). $40 per property +	$40.00	
TOTAL FEES ENCLOSED =	$1,040.00	
	Amount to be refunded	$
	Amount to be charged	$

a. [X] A check in the amount of $1,040.00 to cover the above fees is enclosed. A duplicate copy of this form is enclosed.

b. [] Please charge my Deposit Account No. 23-0975 in the amount of $_____ to cover the above fees. A duplicate copy of this sheet is enclosed.

c. [] The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 23-0975.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

19. CORRESPONDENCE ADDRESS

000513

PATENT TRADEMARK OFFICE

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Registration No. 25,134

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March 16, 2001

THE COMMISSIONER IS AUTHORIZED TO CHARGE ANY DEFICIENCY IN THE FEES FOR THIS PAPER TO DEPOSIT ACCOUNT NO. 23-0975

[CHECK NO. 43548]

[2001_0263A]

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of	:	
Ola OLSVIK	:	**Attn: BOX PCT**
Serial No. NEW	:	**Docket No. 2001_0263A**
Filed March 16, 2001	:	
METHOD FOR PREPARING A H_2-RICH GAS AND A CO_2-RICH GAS AT HIGH PRESSURE **[Corresponding to PCT/NO99/00283 Filed September 15, 1999]**	:	

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, DC 20231

Sir:

Please amend the above-identified application as follows:

IN THE SPECIFICATION:

Page 1, after the title of the invention, please insert

--This application is a 371 application of PCT/NO99/00283 filed September 15, 1999.--

IN THE CLAIMS:

Please amend the following claims as indicated:

3(amended). Method according to claim 1, characterized in that the pressure in the reforming reactor is from about 200 to about 500 bar.

4(amended). Method according to claim 1, characterized in that the CO_2-rich gas stream is present at a pressure within the interval from 20 to 200 bar.

5(amended). Method according to claim 1,

characterized in that the mixture in the reforming reactor is passed over a catalyst bed.

6(amended). Method according to claim 1,

characterized in that the reaction in the reforming reactor is carried out without a catalyst.

Please add the following new claims:

--11(new). Method according to claim 2,

characterized in that the pressure in the reforming reactor is from about 200 to about 500 bar.

12(new). Method according to claim 2,

characterized in that the CO_2-rich gas stream is present at a pressure within the interval from 20 to 200 bar.

13(new). Method according to claim 3,

characterized in that the CO_2-rich gas stream is present at a pressure within the interval from 20 to 200 bar.

14(new). Method according to claim 2,

characterized in that the mixture in the reforming reactor is passed over a catalyst bed.

15(new). Method according to claim 3,

characterized in that the mixture in the reforming reactor is passed over a catalyst bed.

16(new). Method according to claim 4,

characterized in that the mixture in the reforming reactor is passed over a catalyst bed.

17(new). Method according to claim 2,

characterized in that the reaction in the reforming reactor is carried out without a catalyst.

18(new). Method according to claim 3,

characterized in that the reaction in the reforming reactor is carried out without a catalyst.

19(new). Method according to claim 4,

characterized in that the reaction in the reforming reactor is carried out without a catalyst.

20(new). Method according to claim 5,

characterized in that the reaction in the reforming reactor is carried out without a catalyst.--

REMARKS

The specification has been amended to insert a cross-reference to the international application on which the present U.S. application is based.

The claims have been amended to correct their improper multiple dependency, as a result of which new claims 11-20 have been added to the application.

Attached hereto is a marked-up version of the changes made to the claims by the current Preliminary Amendment. The attached page is captioned "**Version with markings to show changes made.**"

Respectfully submitted,

Ola OLSVIK

By _____
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March 16, 2001

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

3(amended). Method according to [claims 1-2] claim 1, characterized in that the pressure in the reforming reactor is from about 200 to about 500 bar.

4(amended). Method according to [claims 1-3] claim 1, characterized in that the CO_2-rich gas stream is present at a pressure within the interval from 20 to 200 bar.

5(amended). Method according to [claims 1-4] claim 1, characterized in that the mixture in the reforming reactor is passed over a catalyst bed.

6(amended). Method according to [claims 1-5] claim 1, characterized in that the reaction in the reforming reactor is carried out without a catalyst.

Method for preparing a H_2-rich gas and a CO_2-rich gas at high pressure.

The present invention comprises a method for production of a CO_2-rich gas for injection purposes or to be deposited, and a hydrogen-rich gas, and use thereof.

It is commonly assumed that the greenhouse effect and the climate on earth have are closely connected to human made emissions of CO_2. These emissions are primarily formed by combustion of coal and hydrocarbons, i.a. by generation of heat and electric power. A desireable goal is therefore to reduce the emission of CO_2 to the atmosphere.

It is known art to reduce the emission of CO_2 from combustion of natural gas, e.g. by gas reforming and shift technology for preparation of a mixture consisting of hydrogen and carbon dioxide. These components are then separated, whereafter hydrogen is used as fuel in a gas turbin and carbon dioxide is deposited after compression to desired pressure. The deposition can be made on the bottom of the sea or in geological reservoires. The reservoires can also contain hydrocarbons. The above mentioned technique is i.a. described in Teknisk Ukeblad No. 16, page 8, 1998.

Known art comprising gas reforming and shift technology as described above is very expensive and at the same time gives less energy yield than a conventional, modern gas power plant.

US 3,652,454 describes preparation of CO_2 and H_2 from a gas stream containing CO by an improved continuous catalytical shift reaction at high pressure. The reaction takes place i one or more shift reactors at a superatmospheric pressure of from 35 to 250 atmospheres, and a temperature between 287°C and 537°C. The patent does not describe reforming of natural gas.

From EP 0 000 993-A1 it is known a method for preparation of ammonia by means of a primary and a secondary catalytic reforming of an hydrocarbon stream at superatmospheric pressure. From the primary catalytic reforming the ratio of steam to carbon is from 2.5 to 3.5, the pressure is from 30 to 120 bar and the temperature out of the reactor is from 750 to 850°C. From the secondary catalytic reforming the content of methane is from 0.2 to 10 % by weight on a dry

basis and the ratio of hydrogen to nitrogen is from 2.2 to 2.7. To the he secondary reforming there is added an excess of air for preparing a gas with a higher content of methane, i.e. at a lower temperature, and/or a lower steam ratio and/or a higher pressure . In the above mentioned EP patent CO_2 is removed at a low pressure by taking out hydrogen at an elevated pressure for further use by the preparation of ammonia.

EP 0 289 419 describes catalytic steam reforming of hydrocarbons for preparing hydrogen i an ammonia process. The catalytic steam reforming takes place at a pressure from 25 to 120 bar, a temperature from 800 to 1000°C and at at ratio steam:carbon of 1.8-2.5. The process is operated in such a way that there are less than 0.3% impurities in the H_2-rich gas which is to be used for production of ammonia. The present invention allows a higher content than 0.3% of CO, CO_2 and CH_4 in the H_2-rich gas stream.

CA 868,821 describes preparation of synthesis gas by steam reforming of hydrocarbons in a gas and a liquid at 50-250 absolute atmospheres, preferably 160 abs. atm. for production of ammonia and methanol.

Known art does not deal with a one step prosess for production av CO_2-rich gas and H_2-rich gas under supercritical conditions for water, where a CO_2-rich gas mixture is taken out at an elevated pressure in the interval from 20 to 200 bar for injection or deposition i marine formations. The present invention involves reduced compression costs by deposition or injection in marine formations because the CO_2-rich gas mixture is taken out at an elevated pressure.

The present invention comprises a method for preparing a CO_2-rich gas stream and a hydrogen rich gas stream, the method comprising the following steps:

a) natural gas and H_2O are fed to a one-step reforming process for preparing a gas mixture comprising CO_2 and H_2 under supercritical conditons for water;

b) the gas mixture from a) is separated into a H_2-rich and a CO_2-rich gas stream, respectively.

Further the temperature in the reforming reactor is from about 400°C to about 600°C, and the method is also characterized by a pressure in the reform-

ing reactor from about 200 to about 500 bar. The CO_2-rich gas stream from the separation unit is at a pressure in the interval from 20 til 200 bar. I the present invention the mixture in the reforming reactor may be passed over a catalyst bed. The reforming can also be carried out without catalyst. The present invention also concerns use of the CO_2-rich gas stream prepared according to the previously mentioned method, where the CO_2-rich gas stream is injected into marine formations. Further, the invention comprises use of the H_2-rich gas stream prepared according to the invention, where the H_2-rich gas stream can be utilized for hydrogenation, i the production of electricity and as a source of energy / fuel in fuel cells.

The following reaction takes place during the reforming:

$$CH_4 + 2H_2O \rightarrow CO_2 + 4H_2$$

The reforming reactor is operated at supercritical conditions for water. The temperature in the reforming reactor is from about 400°C to about 600°C and the pressure in the reforming reactor is from about 200 to about 500 bar. It is an object of the present invention that CO_2 is separated from the gas stream at a pressure of at least 20 bar and maximum 200 bar before being injected into marine formations or by deposition. The reforming reaction takes place over a suitable catalyst bed. The reforming can also take place without catalyst in the reforming reactor. It is also an object of the present invention to use H_2 made according to the method of the invention, for hydrogation, and for production of electricity. Use of H_2 as a source of energy / fuel in fuel cells is further comprised by the present invention.

CO_2 is an acid gas, and the most widely used method to separate the mentioned gas from other non-acid gas molecules is absorption. During absorption the different chemical properties of the gas molecules are utilized. By contacting the gas mixture with a basic liquid the acid gases to a high degree will be dissolved in the liquid. The liquid is separated from the gas and the absorbed gas can the be set free either by altering the composition of the liquid or by altering pressure and temperature. For separation of CO_2 mainly aqueous solutions of alcoholamines are used. The absorption is taking place at a relatively low temperature and high pressure, while stripping of the gas from the liquid is carried

out at a relatively high temperature and low pressure. To liberate CO_2 from the amine phase in the stripping unit stripping steam is usually used. If the partial pressure of CO_2 in the gas into the absorber is high, e.g. higher than 15 bar, it is possible to obtain high concentrations in the amine phase, and a large part of absorbed CO_2 can be set free in the stripping unit at elevated pressure, e.g. 5-8 bar.

By the use of one or more semipermeable membrane units it is possible to achieve that molecules of different molecular weight and different properties permeate the membrane at different velocities. This principle can be utilized to separate gases. For the gas mixture in question membranes can be selected where H_2 permeates rapidly, whereas CO_2 permeates slowly, whereafter a separation-in-part of the different gas components is achieved. By combining solid membranes and liquid membranes it is also possible to achieve a rapid permeation of CO_2, while H_2 is kept back. It can be difficult to achieve complete separation of the different gas components by using different separation methods. This is especially the case by use of membranes. For gas mixtures which are going to be burned, a partly separation of hydrogen and CO_2 will be sufficient.

In the present invention it is desireable to deposit out-separated CO_2. Large amounts of CO_2 can be deposited according to various methods, of which the three most interesting are deposition at very deep oceans, deposition in deep water reservoirs and deposition in oil reservoirs wherin the gas at the same time functions as drive agent for enhanced oil recovery. The two last mentioned storage methods are operated commercially. In these storage forms the CO_2 gas has to be brought to high pressure for transport in pipelines to a deposition well and further to injection. The injection pressure will vary, but could be in the range 50 to 300 bar. If the CO_2 gas can be separated from the H_2/CO_2 mixture at an elevated pressure, significant compression work can be avoided, and this is the case in the present invention.

The invention is further elucidated on Figure 1. Natural gas (1) is passed from an oil/gas field, and blended with H_2O (2) before the mixture is passed to reforming at supercritical conditions. Produced synthesis gas (3) is separated at high pressure into two streams, a CO_2-rich stream (5), which is injected into an

oil/gas field, and a H_2-rich stream (4), respectively The H_2-rich stream is further used for hydrogenation, as a source of energy in fuel cells, and for production of electricity.

Example 1:

The example concerns one or more membrane units wherein the CO_2-rich gas can have a pressure approximately equal to the partial pressure of CO_2 into the separation unit, as shown in Table 1 below.

Table1

Total inlet pressure on the separation unit (bar)	Partial pressure of CO_2 out of the separation unit (bar)
200	40
250	50
300	60

Example 2:

Supercritical conditions occur at pressures above 220 bar and temperatures above 374°C.

In this example it is described at which conditions supercritical conditions occur in the present reactor.

The relationship between temperatur and pressure in the reactor in the present invention is as shown in Table 2. Supercritical conditions occur in the reactor when the values of pressure and temperatur are higher than shown in Table 2.

Table 2

Pressure (bar)	Temperature (°C)
1100	354
750	356
500	362
300	368
220	374

Relationship between temperature and % fraction H_20 at 220 bar is shown in table 3. Supercritical conditions occur in the reactor when the values for temperature and % fraction H_2O at a pressure of 220 bar are higher than shown in Table 3.

Table 3

% fraction H_2O (P =220 bar)	Temperature (°C)
0.95	372
0.85	365
0.75	353

The relationship between pressure and % fraction H_2O at a temperature of 374°C is shown in Table 4. Supercritical conditions occur in the reactor when the values for pressure and % fraction H_2O at 374°C are higher than shown in Table 4.

Table 4

% fraction H_2O (T= 374°C)	Pressure (bar)
0.95	300
0.85	400
0.75	1000

Claims

1. Method for preparing a CO_2-rich gas stream for injection purposes or deposition, and a hydrogen rich gas stream,
characterized in that the method comprises the following steps:

a) natural gas and H_2O are fed into to a one-step reforming process for preparing a gas mixture comprising CO_2 and H_2 under supercritical conditons for water;

b) the gas mixture from a) is separated into a H_2-rich and a CO_2-rich gas stream, respectively.

2. Method according to claim 1,
characterized in that the temperature in the reforming reactor is from about 400°C to about 600°C.

3. Method according to claims 1-2,
characterized in that the pressure in the reforming reactor is from about 200 to about 500 bar.

4. Method according to claims 1-3,
characterized in that the CO_2-rich gas stream is present at a pressure within the interval from 20 to 200 bar.

5. Method according to claims 1-4,
characterized in that the mixture in the reforming reactor is passed over a catalyst bed.

6. Method according to claims 1-5,
characterized in that the reaction in the reforming reactor is carried out without a catalyst.

7. Use of a CO_2-rich gas stream according to claim 1 for injection into marine formations.

8. Use of a H_2-rich gas stream made according to claim 1 for hydrogenation.

9. Use of a H_2-rich gas stream made according to claim 1 as a source of energy / fuel in fuel cells.

10. Use of a H_2-rich gas stream made according to claim 1 for production of electricity.

09/787301

WO 00/18681

PCT/NO99/00283

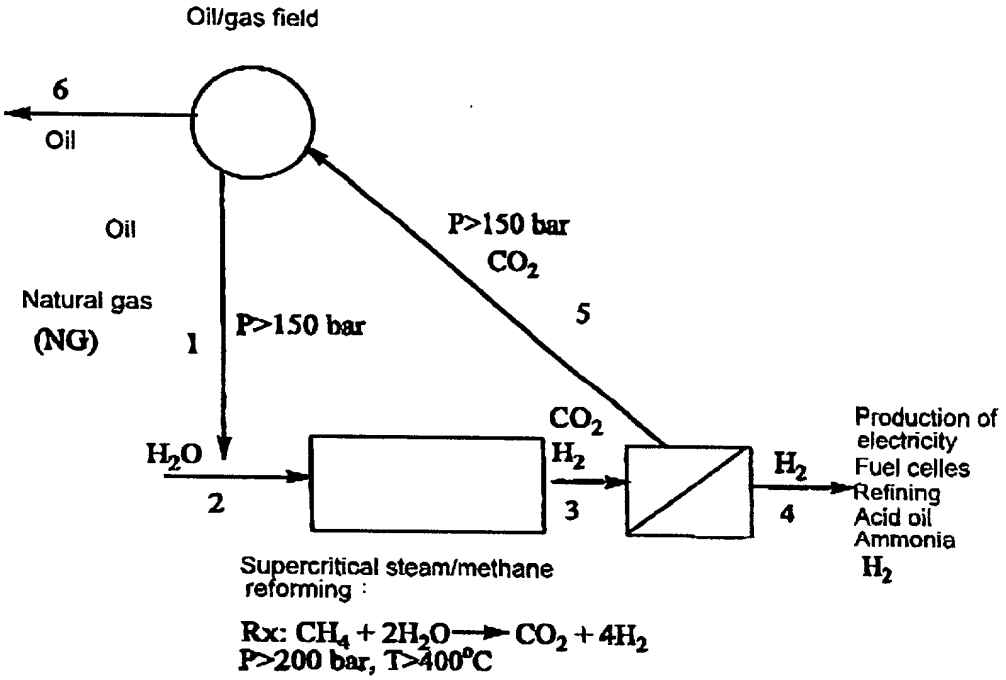

Figure 1

Rev. 11-3/98

Effective October 1997

DECLARATION AND POWER OF ATTORNEY FOR U.S. PATENT APPLICATION

( ) Original ( ) Supplemental ( ) Substitute (X) PCT ( ) Design

As a below named inventor, I hereby declare that: my residence, post office address and citizenship are as stated below next to my name; that I verily believe that I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural inventors are named below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

Title: Method for preparing a H_2-rich gas and a CO_2-rich gas at high pressure

of which is described and claimed in:
( ) the attached specification, or
( ) the specification in the application Serial No. _____ filed _____;
and with amendments through _____ (if applicable), or
(X) the specification in International Application No. PCT/ NO99/00283, filed Sept. 15, 1999 and as amended on _____ (if applicable).

I hereby state that I have reviewed and understand the content of the above-identified specification, including the claims, as amended by any amendment(s) referred to above.

I acknowledge my duty to disclose to the Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, §1.56.

I hereby claim priority benefits under Title 35, United States Code, §119 (and §172 if this application is for a Design) of any application(s) for patent or inventor's certificate listed below and have also identified below any application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

COUNTRY	APPLICATION NO.	DATE OF FILING	PRIORITY CLAIMED
Norway	NO 1998 4296	September 16, 1998	YES

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose information material to patentability as defined in Title 37, Code of Federal Regulations, §1.56 which occurred between the filing date of the prior application and the national or PCT international filing date of this application.

APPLICATION SERIAL NO.	U.S. FILING DATE	STATUS: PATENTED, PENDING, ABANDONED

And I hereby appoint Michael R. Davis, Reg. No. 25,134; Matthew M. Jacob, Reg. No. 25,154; Warren M. Cheek, Jr., Reg. No. 33,367; Nils Pedersen, Reg. No. 33,145; Charles R. Watts, Reg. No. 33,142; and Michael S. Huppert, Reg. No. 40,268, who together constitute the firm of WENDEROTH, LIND & PONACK, L.L.P., jointly and severally, attorneys to prosecute this application and to transact all business in the U.S. Patent and Trademark Office connected therewith.

I hereby authorize the U.S. attorneys named herein to accept and follow instructions from Bryn & Aarflot AS as to any action to be taken in the U.S. Patent and Trademark Office regarding this application without direct communication between the U.S. attorneys and myself. In the event of a change in the persons from whom instructions may be taken, the U.S. attorneys named herein will be so notified by me.

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Residence & Citizenship	CITY	STATE OR COUNTRY	COUNTRY OF CITIZENSHIP	
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Residence & Citizenship	CITY	STATE OR COUNTRY	COUNTRY OF CITIZENSHIP	
Post Office Address	ADDRESS	CITY	STATE OR COUNTRY	ZIP CODE

Full Name of Fifth Inventor	FAMILY NAME	FIRST GIVEN NAME	SECOND GIVEN NAME	
Residence & Citizenship	CITY	STATE OR COUNTRY	COUNTRY OF CITIZENSHIP	
Post Office Address	ADDRESS	CITY	STATE OR COUNTRY	ZIP CODE
Full Name of Sixth Inventor	FAMILY NAME	FIRST GIVEN NAME	SECOND GIVEN NAME	
Residence & Citizenship	CITY	STATE OR COUNTRY	COUNTRY OF CITIZENSHIP	
Post Office Address	ADDRESS	CITY	STATE OR COUNTRY	ZIP CODE
Full Name of Seventh Inventor	FAMILY NAME	FIRST GIVEN NAME	SECOND GIVEN NAME	
Residence & Citizenship	CITY	STATE OR COUNTRY	COUNTRY OF CITIZENSHIP	
Post Office Address	ADDRESS	CITY	STATE OR COUNTRY	ZIP CODE

I further declare that all statements made herein of my own knowledge are true, and that all statements on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

1st Inventor Ola Olsvik Date 16.02.2001

Ola OLSVIK

2nd Inventor _____ Date _____

3rd Inventor _____ Date _____

4th Inventor _____ Date _____

5th Inventor _____ Date _____

6th Inventor _____ Date _____

7th Inventor _____ Date _____

The above application may be more particularly identified as follows:

U.S. Application Serial No. _____ Filing Date _____

Applicant Reference Number 103870/TFM Atty Docket No. _____

Title of Invention Method for preparing a H_2-rich gas and a CO_2-rich gas at high pressure